



ST. LAWRENCE HIGH SCHOOL



A JESUIT CHRISTIAN MINORITY INSTITUTION

FIRST TERM EXAMINATION

Sub: LIFE SCIENCE

Class: IX

F.M :75

Duration: 2 hours 30 Minutes

Date: 16.04.2019

Group-A

Write the answers in complete sentences by choosing the correct answer for each question with respective serial number: 1x15=15

- i) Two chambered heart is found in
 (1) Crocodiles (2) **Fishes** (3) Birds (4) Amphibians
- ii) Cones may be observed in
 (1) Mango (2) Paddy (3) Fern (4) **Pinus**
- iii) Which of the following does not belong to Vitamin B-Complex?
 (1) Thianine (2) Riboflavin (3) **Calciferol** (4) Niacine
- iv) Which of the following cell organelle is not bounded by membrane?
 (1) Mitochondria (2) Chloroplast (3) Lysosomes (4) **Ribosomes**
- v) The sugar of DNA is
 (1) hexose (2) **pentose** (3) Triose (4) Heptose
- vi) Xylem is a
 (1) Simple Permanent tissue (2) **Complex permanent tissue** (3) Chlorenchyma (4) Aerenchyma
- vii) Liverfluke belongs to the phylum
 (1) **Platyhelminthes** (2) Nematelminthes (3) Annelida (4) Arthropoda
- viii) Which of the following microorganisms are used as single cell protein?
 (1) **Spirulina** (2) Spirogyra (3) Chara (4) Chlamydomonas
- ix) Which organisms have two basic body forms-polyp and medusa?
 (1) **Cnidaria** (2) Ctenophora (3) Porifera (4) Echinodermata
- x) The earliest life forms were known as
 (1) Bacteria (2) **Coacervate** (3) Fungi (4) eukaryota
- xi) Lycopodium is a
 (1) Moss (2) **Fern** (3) Algae (4) Fungi
- xii) The ribosomes found in eukaryotes are
 (1) **70s** (2) 50s (3) 60s (4) **80s**
- xiii) The lipid found in plasma membrane is
 (1) **phospholipids** (2) sphingolipids (3) triglycerides (4) steroids

Group-B

2.1 Fill in the blanks with proper words in the following sentences:- 1x4=4

- i) **Manganese** is a mineral which is an antioxidant.

- ii) **Sclereids** are sclerenchymatous cells with irregular shape.
- iii) The first formed xylem is called **Protoxylem**
- iv) **Carl/Carolus Linnaeus** introduced the system of binomial nomenclature.

2.2 State whether the following statements are True or False:- **1x4=4**

- i) Golden rice has beta-carotene gene **True**
- ii) The study of structure and function of different microbes is called cytology. **False**
- iii) Flying fox belongs to aves. **False**
- iv) First life formed around 4.5 bya. **False**

2.3 Match the words in column A with those which are most appropriate in Column B and re-write the correct pair mentioning the serial numbers of both the columns: **1x4=4**

Column A

- i) Ascidia - **b) Urochordata**
- ii) Platyhelminthes - **a)acoelomate**
- iii) Placoid scales-**d)Chondrichthyes**
- iv) Rohu-c) **Osteichthyes**

2.4 Answer in a single word or in a single sentence: **1x5=5**

- i) What is the cell wall of fungus made up of? **Chitin**
- ii) What is author citation? **In botanical nomenclature, author citation refers to citing the person or group of people who validly published a botanical name, i.e. who first published the name .**
- iii) Write any one important property of RNA. **Presence of Adenine, Guanine, Cytosine, Uracil/ Single stranded/ Produced by transcription from DNA**
- iv) Write the function of Vitamin K in the body. **Helps clot blood and maintains bone health**
- v) Which group of plants are called 'amphibians of the plant kingdom'? **Bryophytes**

Group- C

3. Answer the questions given below: **2x10=20**

- 3.1 What are plasmodesmata?
Ans: Plasmodesmata are direct cytoplasmic connections between adjacent cells which passes through the cell wall & allows communication between them.
- 3.2 What are fatty acids? What is their role in living organisms?
Ans:These are components of lipids consisting of a straight chain of an even number of carbon atoms with hydrogen atoms along the length of the chain & a carboxyl group (-COOH)at the other end. Fatty acids are the building blocks of fat and they get absorbed in our blood.They are the major sources of energy.
- 3.3 What will happen if golgi apparatus is absent in cell?
Ans:The function of the GERL system gets affected if the Golgi apparatus is absent in the cell as the latter is involved in packaging proteins, absorption & secretion of the essential proteins into the cytoplasm & outside the cell.
- 3.4 Write the location and function of intercalary meristem.

Ans:Location :Intercalary meristem is the meristematic tissue present between two regions of permanent tissue.

Function: It increases the apical growth & helps the plant to produce permanent tissue.

3.5 What is cambium?

Ans: It is the tissue layer found in the area between the xylem and the phloem tissue ,forming parallel row of cells ,which provides partially undifferentiated cells for plant growth.

3.6 Write two similarities between amphibians and birds.

Ans:

Amphibians	Birds
i.Adults breath through lungs. ii.For aquatic adaptation Hinds limbs develop webbed foot.	i.Birds breath through air sacs associated with lungs. ii.Birds like duck,geese & swans hav webbed foot for paddling through water.

3.7 Write any two differences between osteichthyes and chondrichthyes.

Ans:

Osteichthyes	Chondrichthyes
i.Endoskeleton is bony. ii.Skin covered by Cycloid,ctenoid & ganoid scales. iii.Gills are covered by operculum.	ii.Endoskeleton is cartilaginous. ii.Skin is covered by Placoid scales. iii. Gills are not covered by operculum.

3.8 Why is earthworm considered as an annelid?

Ans:Earthworm shows metameric segmentation (repetition of organs & tissues at intervals along the body)on its body which is considered as the most distinguishing character of annelids.

3.9 Which phylum contains 'lasso' cells?Give one example of any one member of the phylum .

Ans: Lasso cells are present in the animals belonging to the phylum Ctenophora.

Examples –Pleurobrachia bachei,Ctenoplana agnae.

3.10 Write any two differences between mosses and ferns.

Ans:

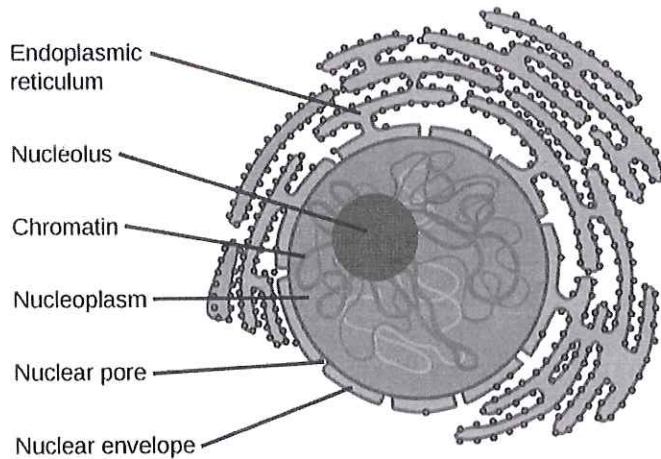
Mosses	Ferns
i.Plant body with root like rhizoids,short stem & simple leaves. ii.Roots represented by smooth walled or notched or tuberculate rhizoids. iii.Stem non-woody compact with thick walled hydrome and thin walled leptome.	i.Plant body well differentiated into root,stem,with first formed vascular tissue. ii.Roots are adventitious represented by rhizoids. iii.Stem non woodywith true xylem and phloem rhizomatous in nature.

Group- D

(Long answer type question)

4. Write any 5 questions given below. The mark allotted for each question is 5(the division of marks is either 3+2, 2+3 or 5):

- 4.1 Draw a neat diagram of the nucleus and label any four parts. Why is it called the 'brain of the cell'? 3+2 =5



Nucleus of the cell is considered as the brain of the cell as it controls and directs the functions to be performed by the cell regarding different functions as it contains DNA, the hereditary material, which in turn contains the genes encoding particular proteins.

- 4.2 How does the GERL system work? 5
Ans: GERL system includes Golgi apparatus, Endoplasmic reticulum and Lysosome which work in close co-ordination with each other in performing a set of functions like synthesis, processing, packaging, storage and secretion of proteins. This also includes the modification of the proteins which are modified by adding some important functional groups which make them perfect to perform a specific function after it is delivered properly.
- 4.3 Differentiate between prokaryotic and eukaryotic cell. 2+3=5

Prokaryotic Cell	Eukaryotic cell
<p>i. Absence of a true Nucleus but presence of a nucleoid.</p> <p>ii. Naked & circular DNA without histone proteins.</p> <p>iii. Ribosomes are of 70S type.</p> <p>iv. Chloroplast absent & chlorophyll remain scattered in the cytoplasm.</p> <p>v. Presence of Endoplasmic reticulum, Mitochondria, & other cell organelles.</p>	<p>i. Presence of a membrane bound by true Nucleus.</p> <p>ii. Linear DNA associated with basic protein histone.</p> <p>iii. Ribosomes are of 80S type.</p> <p>iv. Presence of proper Chloroplast.</p> <p>v. Absence of Endoplasmic reticulum, Mitochondria, & other cell organelles.</p>

- 4.4 Draw the structure of mitochondria and label any 5 parts. What is ATP? 2+3= 5

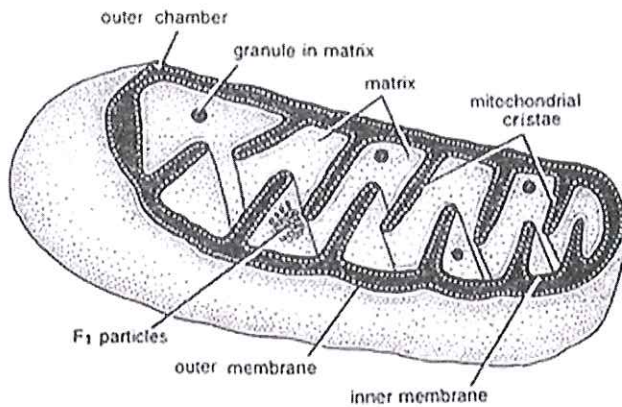


Fig. 293. Structure of mitochondrion as seen in electron microscope (Diagrammatic).

ATP is the energy currency of the cell. It holds energy released in exergonic reactions. Energy is usually liberated from the ATP molecule to do work in the cell by a reaction that removes one of the phosphate groups leaving Adenosine diphosphate (ADP).

4.5 Write the characteristics of the kingdom mollusca. Write any two differences of this phylum with arthropoda. 2+3=5

- Characteristics of Mollusca:**
- i. The body is covered by a shell made of calcium carbonate.
 - ii. Body is unsegmented with a distinct head, muscular foot and visceral hump.
 - iii. Excretory organ is called Organ of Bojanus.
 - iv. The buccal cavity contains a rasping organ called Radula with transverse rows of teeth.

Mollusca	Arthropoda
<ul style="list-style-type: none"> i. Excretory organ is called Organ of Bojanus. ii. These are soft bodied invertebrates with one or two shells. 	<ul style="list-style-type: none"> i. Excretory organ is called is Malpighian tubule. ii. These are invertebrates with jointed appendages.

4.6 Draw the structure of the chloroplast and label any 5 parts.

5

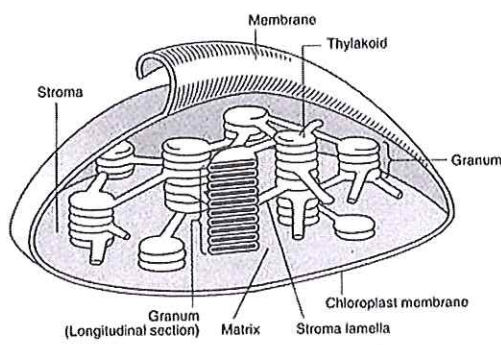


Fig. 2.53: Three dimensional figure of a chloroplast